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Energy Efficiency Award system in Malaysia for energy sustainability

Zainuddin Abdul Manan [a,*], Lim Jeng Shiun [a], Sharifah Rafidah Wan Alwi [a], Haslenda Hashim [a], K.S. Kannan [b,1], Norhasliza Mokhtar [b,1], Ahmad Zairin Ismail [b,1]

[a] Process Systems Engineering Centre (PROSPECT), Faculty of Chemical and Natural Resources Engineering, Universiti Teknologi Malaysia, 81310 Skudai, Johor, Malaysia
[b] Malaysia Energy Centre, No. 2, Jalan 9/10 Persiaran Usahawan, Seksyen 9, 43650 Bandar Baru Bangi, Selangor, Malaysia

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ABSTRACT

Many countries have organised energy awards as an instrument to promote energy efficiency (EE), to contribute towards energy sustainability and to provide a mechanism for organisations to continuously search, benchmark and acknowledge initiatives and best practices in EE. To be effective, an award system must be tailored towards the needs, the level of readiness and the acceptance of a nation. This paper presents a framework for implementation of a national EE award in the context of Malaysia. The current energy scenario and energy issues relevant to Malaysia are first highlighted to establish the premise for organising a national energy award. Models and success stories of EE awards in other countries are discussed as possible benchmarks for implementation. The results of a survey conducted on various energy stakeholders in Malaysia confirmed the needs, readiness and acceptance for a national EE award. A framework for the implementation of a Malaysian EE award is proposed based on the survey conducted, and on various models of energy award implementation worldwide.

Contents

Abbreviations: MEC, Malaysia Energy Centre; MEGTW, Ministry of Energy, Green Technology and Water; ECCJ, Energy Conservation Centre of Japan; ESCOs, Energy services companies; ITP, Industrial Technologies Program; CEED, Centre for Economic and Environmental Development; BEE, Bureau of Energy Efficiency; ASEAN, Association of South East Asia; DOE, Department of Energy; ACE, ASEAN Centre for Energy; ASHARE, American Society of Heating, Refrigerating and Air-Conditioning Engineers; SREP, Small Renewable Energy Projects; FMM, Federation of Malaysian Manufacturers; PWD, Public Works Department.

* Corresponding author. Tel.: +60 7 5535609; fax: +60 7 5581463.
E-mail addresses: zain@fkkksa.utm.my (Z.A. Manan), zairin@ptm.org.my (A.Z. Ismail).
[1] Tel: +60 03 8921 0800; fax: +60 03 8921 0801/0802.

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1. Introduction

The current decade has seen the Malaysian economy growing at a rapid rate alongside a stable and reliable energy supply. The key future challenges facing Malaysia are the rapid growth in fuel demand and costs that will require significant imports to meet the final energy demand in 2020, coupled with the potential significant increase GHG emissions. In the Ninth Malaysia Plan, the energy demand is estimated to increase at the rate of 6.3% annually [1] to sustain the nation's economic growth. The Malaysian government has developed key policies and strategies for over 30 years to ensure energy security as well as sustainability, encourage energy efficiency and mitigate environmental impact to meet its rising energy demand (see Fig. 1). Malaysia's current focus is on developing effective instruments and programs that will facilitate the public and private sectors to adapt energy efficiency (EE) and renewable energy (RE) and to contribute towards energy as well as environmental sustainability. One of its most recent and noteworthy efforts to realise these goals is the development of a Malaysian EE award program.

1.1. Instruments to promote energy efficiency (EE)

In general, there are three key instruments to promote EE in industry namely regulation, technical assistance and recognition as well as incentives. *Regulation and legislation* set a minimum target for industry to be energy efficient and to implement RE. Through enforcement, organisations devote their time on implementing government policies on EE and RE. Most developed countries have long imposed various regulations to promote EE and conservation activities. Recently, ASEAN countries like Thailand, Indonesia, Philippines, Malaysia and Vietnam have also followed suit.

In Malaysia, the Ministry of Energy, Green Technology and Water (MEGTW) is responsible to promote EE, and more importantly to provide *technical assistance* to implement EE initiatives through the Malaysian Energy Centre (MEC). Apart from the developed policy guidelines shown in Fig. 1, Malaysia has implemented various EE initiatives covering incentives, subsidies, promotion and education over the last 30 years. These initiatives have been comprehensively documented in MEC website [2].

Malaysia is currently developing its national energy award system as a means to promote EE activities and to *recognize the achievements* as well as *to provide incentives for* the initiatives of various organisations. Fig. 2 shows that incentives and recognition for EE initiatives should be given the highest priority. In order to encourage companies to undertake these initiatives, ample technical assistance should be provided. The presence of incentives, recognition and technical assistance will create the right climate for the government to enforce regulations on EE. This is the model that Malaysia is following to effectively implement its EE policies.

This paper presents the development of an EE award system to promote and share the best practices on EE in Malaysia. Section 1 briefly overviews the Malaysian energy scenario, the need for an award system and the model for promoting EE pursued by Malaysia. Energy awards implemented in various countries worldwide are introduced as benchmarks in Section 2. Section 3 presents the results of a survey on Malaysian industry acceptance of energy award implementation. The energy award and its implementation framework are described in the last section.

2. Models and success stories of Energy Efficiency Award systems worldwide

2.1. Energy awards in developed countries

Globally, many countries have long established energy awards as a feature to promote best practices in EE. A highlight of successful implementation of energy awards in some countries follows.

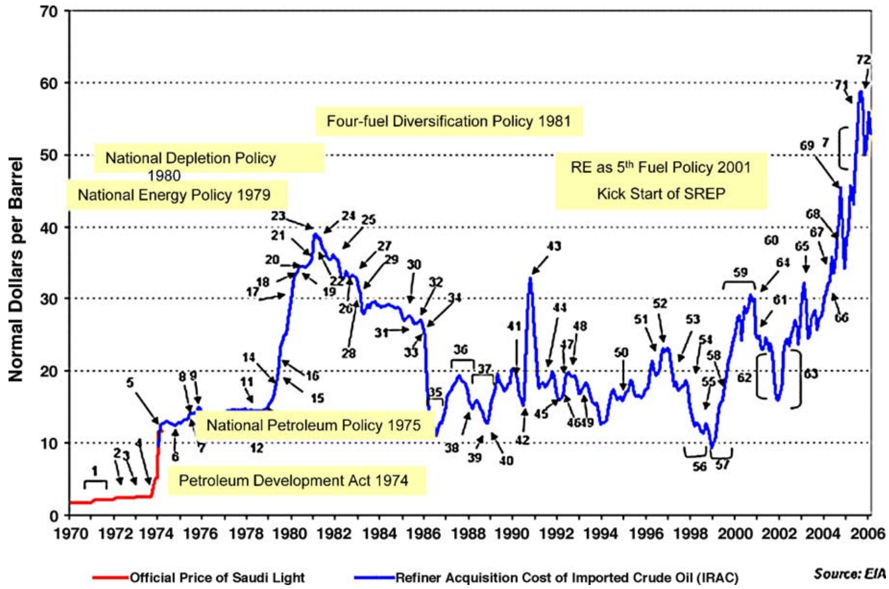


Fig. 1. Evolution of Malaysia energy policy with crude oil price [1].

2.1.1. Japan

Japan has a long history on implementation of award systems for energy conservation. It introduced a national award system on Energy Conservation Excellent Cases in 1975 in response to the first oil crisis in the 1970s. The award competition, which is organised by the Energy Conservation Centre of Japan (ECCJ) includes three categories, namely Category A which consists of small group energy conservation activities conducted by individual divisions or units in a plant, Category B which consists mainly of energy conservation activities performed by technical staff and Category C which covers energy conservation activities in buildings such as offices, schools, hospital, shopping complexes and business facilities. Until 2007, the award system has seen participation by over 20,000 companies in Japan over a period of more than 30 years [3].

2.1.2. United States of America (USA)

USA introduces the "Save Energy Now Recognition Award" to recognize the achievement of companies in USA in saving energy. To qualify for the recognition award, the company must participate in a Save Energy Now energy assessment and report the progress on schedule.

Save Energy Now is initiated by the Industrial Technologies Program (ITP), with the aim to drive a 25% reduction in industrial energy intensity in 10 years. It is a no-cost energy assessment whereby the participated companies are able to utilise ITP resources to reduce energy use while increasing profits. The recipients of the awards will be publicly recognized at major industry meetings or ITP events each year and on the Save Energy Now website [4].

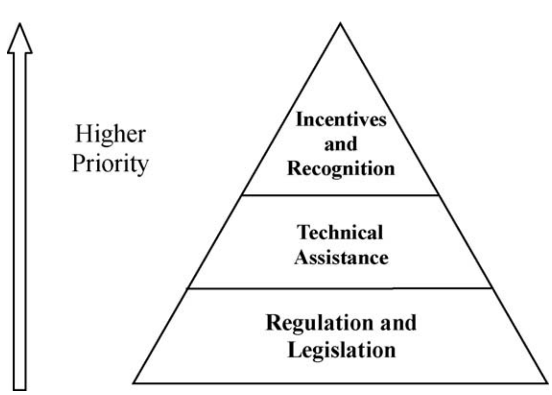


Fig. 2. Model for EE implementation.

2.1.3. Germany

The Energy Efficiency Award 2009 is one of the innovative schemes initiated by the Deutsche Energie-Agentur GmbH (dena) – the German Energy Agency – in collaboration with Deutsche Messe under the scope of the Energie Effizienz Initiative.

The award highlights the importance of energy efficiency in industry and manufacturing facilities for cost reduction and climate change mitigation. More importantly, the award provides a platform for participants to demonstrate the feasibility and cost-effectiveness of energy-efficiency projects. With the showcase of relevant energy-efficiency projects, it aims to encourage more energy saving projects to take off [5].

2.1.4. Hong Kong

The Hong Kong SAR Government takes the lead to spearhead initiatives to conserve energy and promote energy efficiency. In order to provide awareness for the public and professionals and to encourage wider acceptance of the building energy codes and adopt EE practices in the construction of new buildings, the Hong Kong Awards for Energy Efficiency and Conservation were launched for the government sector in 2003 and for the private sector in 2004 [6].

A competition on energy conservation known as the "Hong Kong Energy Efficiency Awards" aims to promote best practices, recognize efforts and honour successes in energy efficiency and conservation for organisations and the public in Hong Kong.

2.1.5. Canada

Natural Resources Canada's Office of Energy Efficiency offers various awards to celebrate leadership and innovation [7]:

(i) *CIPEC Leadership Awards* celebrate the achievements of Canadian companies for their significant and innovative contributions to industrial energy efficiency.
(ii) *ENERGY STAR® Market Transformation Awards* recognize the most energy-efficient product, technology or service.

Table 1
Energy awards in developed countries.

Country	Award	Organiser	Reference
Japan	Energy Conservation Excellent Cases in Japan	Energy Conservation Centre of Japan	[3]
USA	Save Energy Now Recognition Award	Department of Energy	[4]
Germany	Energy Efficiency Award	Deutsche Energie-Agentur GmbH (dena) – the German Energy Agency – in cooperation with KfW Förderbank and Deutsche Messe	[5]
Hong Kong	Hong Kong Energy Efficiency Awards Building Environmental Assessment Method	Hong Kong SAR Government	[6]
Canada	CIPEC Leadership Awards	Natural Resources Canada's Office of Energy Efficiency	[7]
UK	The National Energy Efficiency Awards	EDF Energy UK Centre for Economic and Environmental Development	[8]
India	National Energy Conservation Award	Ministry of Power, Bureau of Energy Efficiency Indian Green Building Council	[9]
Australia	Energy and Water Green Globes Awards	New South Wales Government	[10]

(iii) *Existing Buildings Awards* recognize the commercial and institutional clients that achieve outstanding savings from energy-efficiency retrofits.

2.1.6. United Kingdom

UK CEED (Centre for Economic and Environmental Development) in partnership with EDF Energy launched the UK's first National Energy Efficiency Awards program in 2006 to showcase energy-efficiency best practices [8]. The award highlights the importance of energy efficiency in combating climate change and seeks to increase implementation of energy-efficiency measures among business, government and consumers.

The National Energy Efficiency Awards, incorporating Climate Heroes, celebrate the achievements of individuals and their organisations in significantly reducing energy use and in helping to meet the carbon reduction targets set by the Kyoto Protocol.

The award showcases the successful implementation of innovative, cost-effective and transferable energy measures across a range of categories. They cover the full range of energy users, including large and small companies, the public sector, schools and community groups.

2.1.7. India

The Energy Conservation Award is one of the innovative schemes initiated by the Ministry of Power of India since 1991 to promote energy conservation [9]. The award system is a means to institutionalise energy-efficiency initiatives in the country by identifying and giving recognition to the energy conservation efforts undertaken by various firms and industries. The Bureau of Energy Efficiency (BEE) coordinates the Energy Conservation Award scheme of the Ministry of Power. In the commercial building sector, various new categories of buildings including hospitals, hotels, shopping malls and zonal railways are also being included in the award scheme.

2.1.8. Australia

The Green Globe Awards have been the leading environmental awards in New South Wales of Australia since 2005. They showcase the outstanding achievements of organisation and individuals in the sustainable use of natural resources (energy, water and waste savings) and leadership in tackling climate change. In the Green Globe Awards 2009, the Department of Environment and Climate Change NSW introduced new Community, Local Government and Media Awards to recognize the achievements of leaders in their respective fields [10].

Table 1 summarizes the national energy awards in developed countries and the corresponding award organisers.

2.1.9. Global Energy Awards

Various energy awards are organised annually to honour organisations with outstanding achievements in energy business throughout the world. These include the Platts Global Energy Awards [11], the Energy Globe Award [12], the Global Energy International Prize [13] and the World Clean Energy Awards [14]. The various global energy awards and their respective organisers and information portal are listed in Table 2.

2.2. Energy awards in ASEAN countries

The Association of South East Asia Nations (ASEAN) includes Malaysia, Indonesia, Philippines, Singapore, Thailand, Vietnam, Brunei Darussalam, Cambodia, Myanmar and Laos PDR. Following are ASEAN countries that have implemented national energy awards.

2.2.1. Philippines

To make government buildings a showcase for energy efficiency, Philippines launched an "Enercon program" in 2002 that required all government agencies, bureaus and offices to reduce their annual electricity and fuel consumption by at least 10% by adapting energy-efficiency technologies and practices [15]. The program requires monthly reports to be submitted to the Philippines Department of Energy (DOE). An "Energy Efficient Best Practices Awards in the Government" program was set up to recognize agencies that achieve this objective. The award assesses the success of their "Enercon program" and in this respect, promotes the best practices in EE in the government sector. This initiatives spearheaded by the government was aimed at encouraging private buildings to follow suit and to adopt the best practices in EE.

2.2.2. Thailand

Thailand's Department of Energy launched an award system for energy-efficient buildings in 2006 [16]. Various categories of awards were given for projects including designated building category and creative building for energy conservation which covers new building as well as retrofit of an existing building. The Thai awards measure the government's success in implementing EE and encourages other buildings to replicate the measures adopted, thereby promoting EE in the building sector.

2.2.3. Singapore

Singapore currently gives the Green Building Award after a set of continuous assessment methods called the Green Mark Scheme

Table 2
Global energy awards.

Award	Organiser	Website
Platts Global Energy Awards	Platts-A Division of the McGraw-Hill Companies	[11]
Energy Globe Award	Energy Globe Portal	[12]
Global Energy International Prize	Global Energy Foundation	[13]
World Clean Energy Awards	Transatlantic21 Association	[14]

[17]. The award advisory committee meets every quarter to discuss and review the scheme, highlights new R&D initiatives and nominates suitable projects for the ASEAN EE Building competition. The BCA Green Mark Scheme was launched in January 2005 as an initiative to move Singapore's construction industry towards more environment-friendly buildings, promote sustainability in the built environment and raise environmental awareness among developers, designers and builders during the life cycle of building design and construction.

2.3. ASEAN Energy Awards

ASEAN Energy Awards have been given by the *ASEAN Centre for Energy* (ACE) since 2001 [18]. The main objective of the award is to acknowledge the excellent public and private entities in the field of energy efficiency and renewable energy. The award categories include ASEAN Best Practices Competition for Energy Efficient Buildings, Renewable Energy Project Competition and the Energy Management Award. The winners are awarded with trophies and plaques and are given high-profile recognition in an award presentation ceremony attended by the ministers of energy from ASEAN countries and other delegates.

2.4. Impact of energy awards

The survey conducted on energy awards worldwide has generally shown that energy awards have made significant impact to achieve the objectives of encouraging companies to adopt energy efficiency as well as renewable energy and share best practices among companies. At the company level, the energy award has provided a platform for participating companies to audit the energy usage of their organisations, identify the possible energy saving projects and ultimately increase the company profitability and productivity. India for example, receives more than 230 applications to participate in the 2007 National Energy Conservation Awards from various industries [9]. The Energy Savings Assessment Recognition Program of the United States reported that, out of 527 plants being assessed, more than $852 million energy cost savings was identified. Among these, more than $121 million savings had been realised [19].

In the context of ASEAN, our survey reveals that countries that have organised national energy awards are better able to promote EE and encourage industry to implement and share the best practices. It is found that the increased participation of other companies through replication and adoption of sustainable energy management system and other good practices towards energy-efficient operation by industry and building owners provide a "domino effect" for other companies to follow suit and to start implementing the management and technical aspects of energy conservation in the design, construction, operation, and maintenance of their factories and buildings.

Note from the analysis of the winners for ASEAN Energy Awards for energy management project competition shown in Table 3, Thailand, which has organised EE and RE awards at national level has been the most frequent winner of the competitions, with a total of 7 wins (54%) through out 2-year competitions [18]. This is followed by Philippines (23%), Malaysia (15%), and Vietnam (8%). Table 4 shows the list of winners under the Energy Management category for the ASEAN Energy Award Competition.

Table 3
Total number of wins in ASEAN Energy Awards—Energy Management Competition Category.

Country	Number of wins	% wins
Thailand	10	47.6
Philippines	4	19.0
Malaysia	2	9.5
Indonesia	2	9.5
Vietnam	1	4.8
Cambodia	1	4.8
Brunei	1	4.8

Table 4
List of winners for the ASEAN Energy Awards—Energy Management Competition Category.

Year	Ranking	Building	Industry
2009	Winner	Thailand	Thailand
	1st Runner up	Philippines	Indonesia (2 winners)
	2nd Runner up	Cambodia, Brunei and Indonesia	Thailand
2008	Winner	Thailand	Thailand
	1st Runner up	Thailand	Thailand
	2nd Runner up	Vietnam and Malaysia	Philippines
2007	Winner	Thailand	Thailand
	1st Runner up	Malaysia	Philippines
	2nd Runner up	Thailand	Philippines

Apart from emulating successful companies in implementing best practices in EE and to increase a company's profitability, as highlighted in this section, the award recognition from the government is an effective tool to enhance a company's profile and public image, and to stand out from its competitors. All in all, the energy awards have a significant role to play in supporting a nation's effort to achieve energy sustainability. To be effective, an award system must be tailored towards the needs, the level of readiness and the acceptance of a nation. In the next section, we describe the findings from a survey conducted to obtain feedbacks form the Malaysian energy stakeholders' on a national energy award system. The findings of the survey were used as a basis to formulate an effective national energy award system for Malaysia.

3. Survey findings on implementation of energy awards in Malaysia

3.1. Background information

To develop the framework for implementation of a national energy award system, a half-day workshop of stakeholders was conducted in Putrajaya, Malaysia. The participants were given an overview of the concept of energy awards, the models as well as success stories. A group discussion was then organised to get feedbacks and recommendations from participants on the formulation of a national energy award system. Finally, a survey was conducted to assess the stakeholders view on the implementation of an energy award system in Malaysia.

The survey on "Proposed Implementation of EE Awards in Malaysia" was conducted with the objectives to

- identify barriers towards implementation of energy award
- formulate effective strategies to promote and encourage participation in an energy award competition
- take appropriate steps to ensure sustainability of the energy award program

The findings were based on the survey conducted in the Workshop on Implementation of Energy Award, organised by Malaysian Energy Centre (PTM) and a workshop conducted by American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHARE). A total of 30 survey forms were analysed. The composition of the poll is highlighted in Fig. 3.

As shown in Fig. 3, the poll consisted of respondents comprising stakeholders from a good mix of backgrounds including repre-

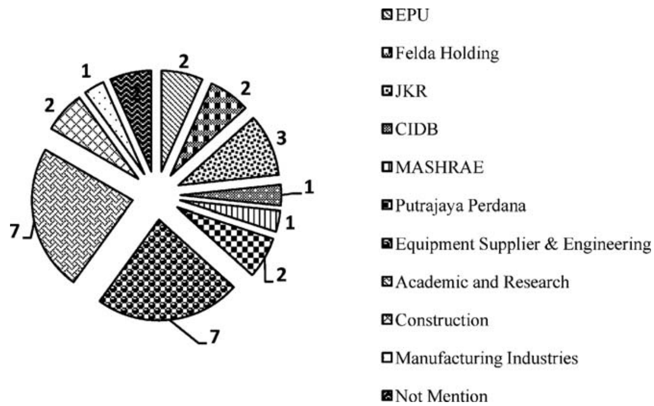


Fig. 3. Backgrounds of the respondents.

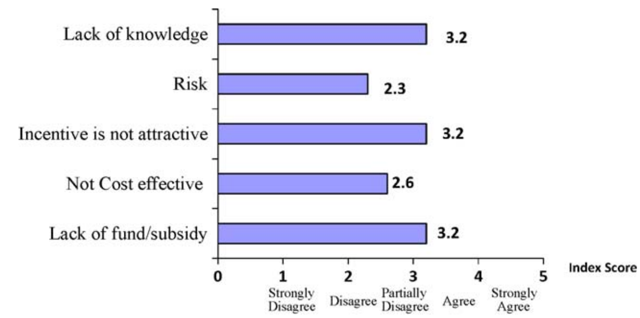


Fig. 5. Score index on EE implementation barriers.

sentatives from the government agencies, the construction and manufacturing sectors, building owners, academicians, research institutions and suppliers for EE equipment. The findings from the survey are highlighted next.

3.2. Survey on EE initiatives in Malaysian company

3.2.1. Measures of EE in companies

Fig. 4 shows that about half of the poll reports some EE measures implemented in their company. The EE/RE measures mentioned include:

- EE equipment, daylight, EE lighting, EE cooling and variable speed pumps
- Energy audit and energy efficiency measures
- Solar hybrid, solar energy for air conditioning
- Project implementation under Small Renewable Energy Projects (SREP)
- Utilisation of 'waste' for energy generation

3.2.2. Barriers on EE implementation

As shown in Fig. 5, the poll partially agreed that lack of incentives, technical knowledge and fund or subsidies are the major barriers towards EE implementation in their company.

According to those polled, companies in Malaysia are profit oriented, and for them to implement the EE projects calls for tangible and attractive incentives. The findings also indicated that company's top managers lack awareness on EE issues. In the case when the top management is committed to EE activities, the lack of expertise on EE remains a barrier for project implementation.

Besides, as some of the EE project returns are unpredictable, companies are reluctant to implement the project at their own expenses. As mentioned before, investment on EE can be expensive. Therefore, lack of fund and subsidy, particularly for EE certainly discouraged companies to be involved.

3.3. Implementation of energy award in Malaysia

3.3.1. ASEAN Energy Award awareness

Fig. 6 shows that half of those polled are aware of ASEAN Energy Awards. Among the respondents that are aware of ASEAN Energy Award, 16% of them learnt about ASEAN Energy Award from PTM. This is a good indication on the effectiveness of PTM as the government agency is responsible to actively promote EE-related activities and projects.

3.3.2. Willingness to join a Malaysian EE award

86% of the respondents expressed interest in participating in an energy award program as shown in Fig. 7. One respondent mentioned that the function of energy award in promoting energy conservation and environmental protection is the reason for him to join. However, there are those who are reluctant to commit themselves in energy award, and reasoned that joining an energy award program can be time consuming, and calls for expenses in human resources.

3.3.3. Possible incentives for EE energy award

As shown in Fig. 8, funds/grants are most welcomed as this would ease the financial barrier of the winning company to implement future energy projects. With sufficient funding, the proposed recommendations from an energy audit involving EE activities can be carried out by the facility owners.

Besides, the poll strongly thinks that giving out certificate, logo/medal/plague issued by government can be a major attraction for companies to participate, as the company recognizes this as a major recognition and commendation by the government, and hence, an opportunity for companies to build their image.

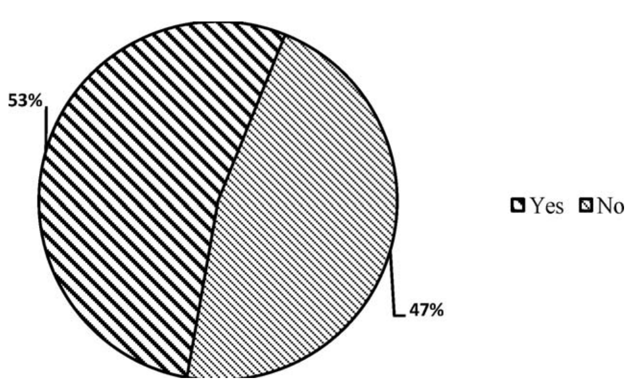


Fig. 4. Percentage respondents to the question if their company has implemented some EE measures.

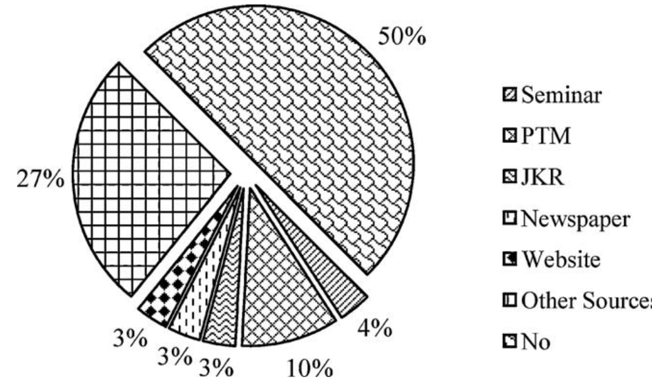


Fig. 6. Awareness of ASEAN Energy Award and the source of information.

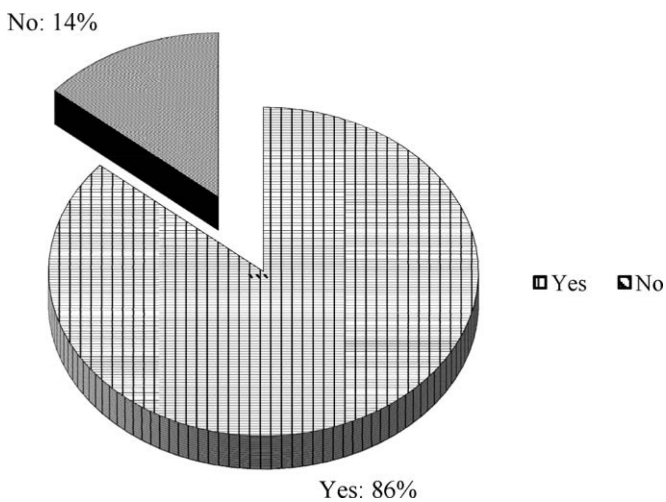


Fig. 7. Willingness to participate in an EE award.

3.3.4. The main barriers for participating in an EE award

As shown in Fig. 9, the poll strongly agreed that lack of awareness on an energy award program is the main barrier. Without proper promotion, the top management of a company may not be aware of the existence of an energy award, not to mention to participate in it.

A complex application form could deter a company from participating, due to the need to put extra man hours to fill in the form. Other companies may not be able to participate due to the fact that some of the required data may be withheld by the consultants responsible for facilities upgrading. In such a case, the company may need to pay extra fees to obtain the required data.

Given the options to choose between participating in an award or improving productivity and profit, many companies prefer to dedicate their time for the latter, as participation in award does not guarantee to generate revenue for their businesses.

3.3.5. Required supports to encourage participation in EE award

As shown in Fig. 10, the main support that participants expected from the organiser is to receive advice in terms of format and data required. Some of them also expected to receive

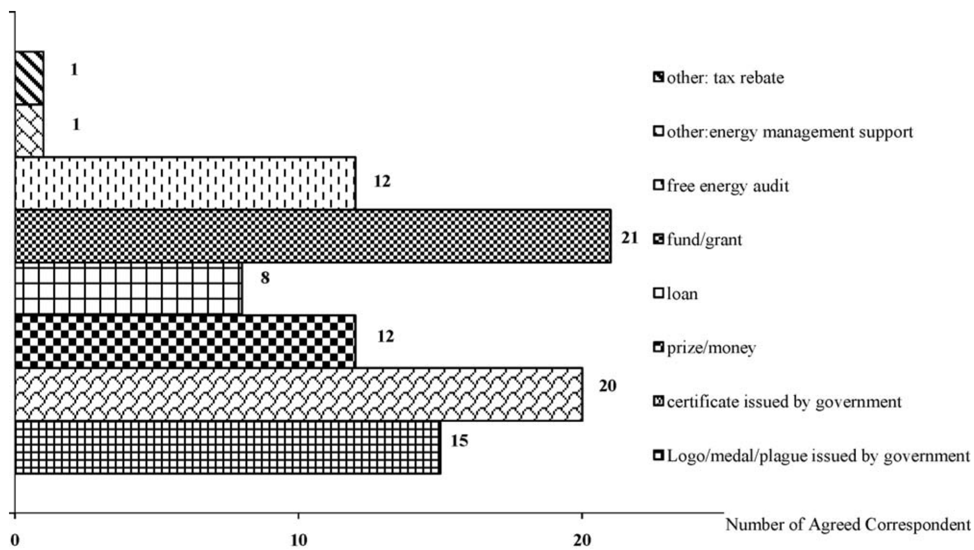


Fig. 8. Preferred incentives for energy award.

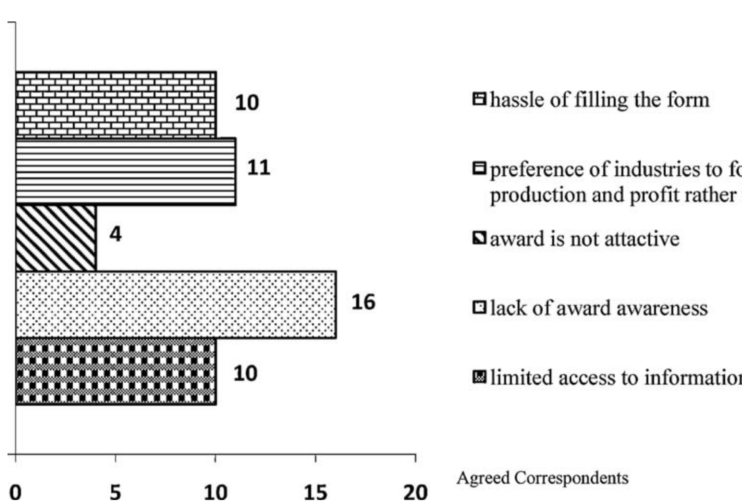


Fig. 9. Barriers towards participating in an EE award.

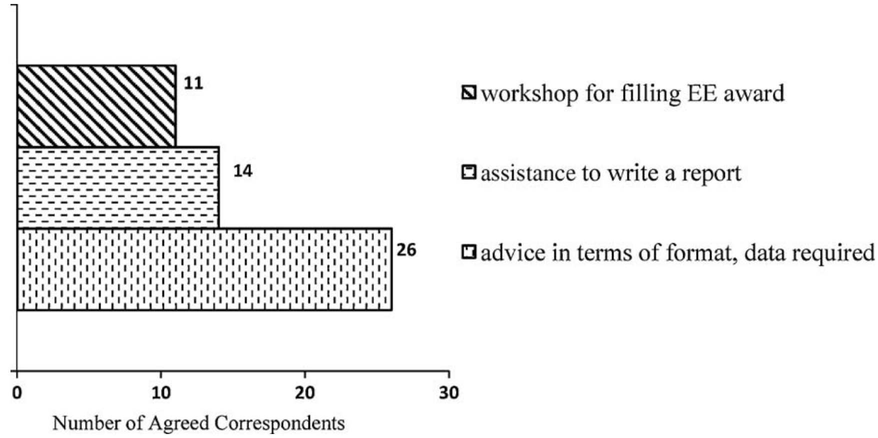


Fig. 10. Required supports for EE award participation.

assistance in writing report, as it would help them submit a competent report, which has a winning potential.

Other remarks and suggestions include:

- Suggestion for the organiser to provide technical assistance.
- Suggestion to use a common tool such as Green Mark or locally developed evaluation tools for buildings/industries.
- Suggestion for the organiser to provide online and user-friendly portal for participants to submit their applications.

3.4. Promotion strategy for EE award

According to the opinion poll in Fig. 11, TV and newspaper are the most effective ways to promote the energy award, as they broaden the coverage of the event to the public. In addition, the Internet could be a good alternative to ensure a broad coverage of this event.

3.5. Strategy to sustain EE award in Malaysia

According to Fig. 12, half of the poll agreed that incentives and government policies are effective 'carrot and stick' approaches to sustain the energy award. Attractive incentives will encourage company participations while government policy will mandate companies to engage in EE activities.

3.6. Other recommendations

The other recommendations gathered from this survey are:

- to create one category for building developer
- to create one category for learning campuses
- to make it mandatory for all designs to follow EE guidelines by PTM as well as comply to the MS1525 design codes
- to revise the MS1525 every 2–3 years to be more stringent in energy saving
- to exert political pressure for implementation
- to fix the timeline for submission and award presentation
- to determine who the key driver is
- to form a one-stop centre
- to promote EE education to primary and secondary students.

3.7. Survey conclusion

A summary of the findings of this survey is presented in Table 5.

4. Proposed EE award implementation strategy

The results of a survey conducted on various stakeholders in Malaysia confirmed the needs, readiness and acceptance for a national energy award. A framework for implementation of

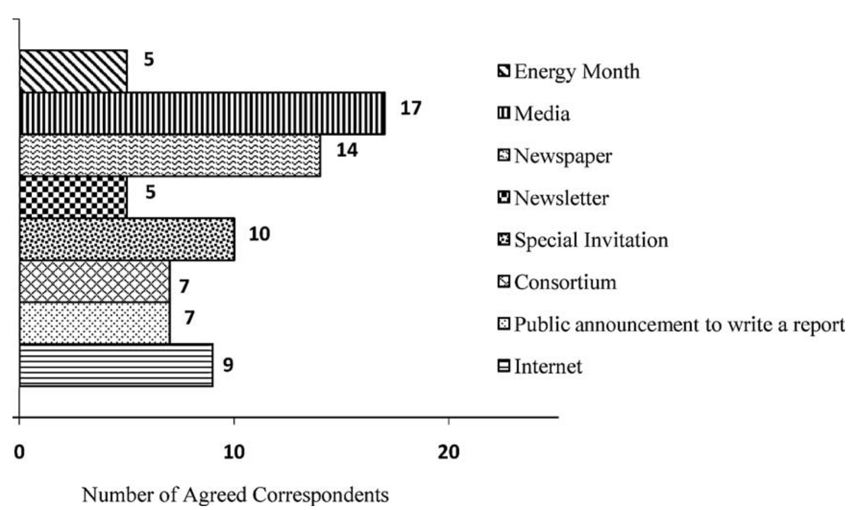


Fig. 11. Promotion strategies for EE award.

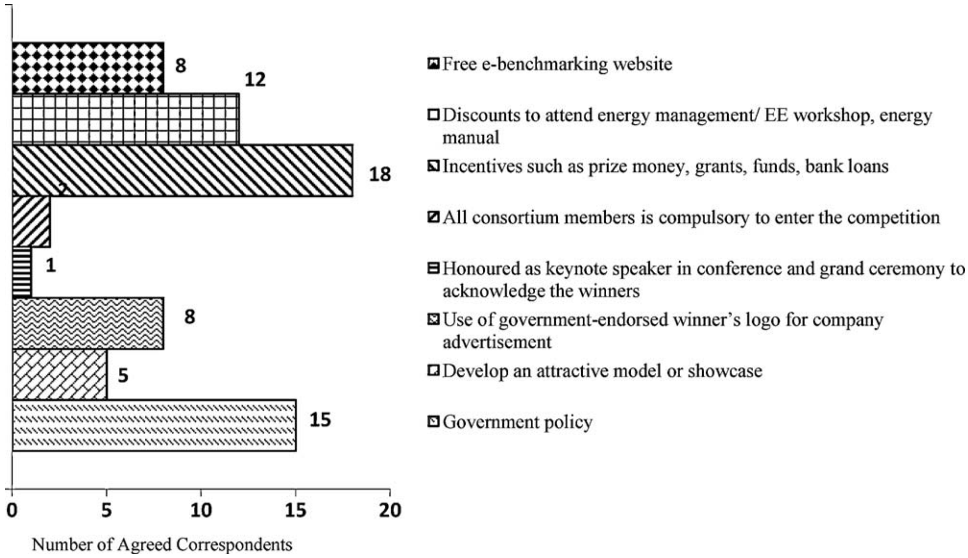


Fig. 12. Strategy to sustain EE award.

Malaysian energy award was proposed based on the surveys on Malaysian stakeholders and on energy award implementation worldwide. This section describes the proposed EE award framework.

4.1. Buildings Energy Efficiency Award

The EE Buildings Award could be implemented immediately since many buildings are already implementing energy-efficiency strategies. The proposed award categories will include (i) office buildings and (ii) hotels. Among the critical success factors identified for the successful implementation of the building awards in Malaysia include:

(a) Strategic partnership with other agencies/organisations to effectively implement the award competition. For offices, the suggested agencies are developers, Association of Consulting Engineers (ACEM) and Malaysian Association of Architects (PAM). For hotels, the suggested agency is the Malaysian Association of Hotel Owners (MAHO).

Table 5
Summary of survey findings.

Issues	Findings
EE measures in companies	Half the poll have implemented some EE measures in their companies EE equipment, daylight, EE lighting, EE cooling, VSP Energy audit Solar hybrid, solar energy for air conditioning Project implementation under SREP and EE Utilisation of 'waste' for energy generation
Barriers for EE implementation	Lack of incentives Lack of technical knowledge Lack of fund or subsidies
Awareness on ASEAN Energy Award	Three quarter of the poll is aware of ASEAN Energy Award 10% of them learnt ASEAN Energy Award from PTM
Willingness to join an EE award program	86% expressed interest in joining an energy award
Possible incentives for EE award	Certificate issued by the government Logo/medal/plague issued by the government Fund/grant Free energy audit
Main barriers for participating in an EE award	Lack of awareness on energy award
Required supports to encourage participation in an EE award	Advice in terms of format and data required Use of a common tool such as Green Mark, or locally developed evaluation tool for buildings/industries Provide online and user-friendly portal for participants to submit their applications
Promotion strategy for an EE award	TV and newspaper To setup a neutral promotion and monitoring agency such as PTM, with support from the government
Strategy to sustain an EE award in Malaysia	Incentives and government policies resembled the 'carrot and stick' to sustain an energy award
Other suggestions	To create one category for building developer To create one category for learning campus To make it mandatory for all designs to follow EE guidelines by PTM and the MS1525 compliance To revise the MS1525 every 2–3 years to be more stringent in energy saving To fix the timeline for submission and award presentation

(b) Getting the commitment from an organisation's top management.
(c) Compliance with the MS1525 and implementation of energy management practices in the organisation.
(d) For award sustainability, it was recommended that the government lead by example. The economic planning unit (EPU) is recommended to direct all the ministries to upgrade their buildings to comply with MS1525 and participate in the forthcoming EE Building Award competition.

4.2. Industrial Energy Efficiency Award

This category could be implemented immediately since many companies in Malaysia have already implemented energy efficiency strategies, especially after the Malaysian Industrial Energy Efficiency Improvement Project (MIEEIP). The critical success factors identified for the successful implementation of the building awards in Malaysia include:

(a) The initial target for this award category will be for the small- to medium-sized industries.
(b) The Malaysia Energy Centre is proposed to cooperate with the Federation of Malaysian Manufacturers in implementing these Industrial EE awards.
(c) As most companies are naturally reluctant to share data, the competition will be based on energy management practices.

4.3. Incentives for Building & Industry EE Awards

Various incentives are proposed to strongly attract participation of building owners and industry to participate in the award program. The suggested incentives include:

(i) Free 'preliminary' or 'walk-through' audit for participants of the Buildings & Industrial EE awards.
(ii) Free technical assistance for participants to prepare submission documentation
(iii) Cash prizes for winners as follows:
  (a) First prize: RM 30,000 ($8400)
  (b) Second prize: RM 20,000 ($5600)
  (c) Third prize: RM 10,000 ($2800)
(iv) Special electricity tariff for first prize winners for a period of 2 years.
(v) To facilitate loans for winners to carry out energy-efficiency retrofits.
(vi) Assistance for companies to obtain existing fiscal incentives for EE retrofits.
(vii) Nomination for the winners of the EE Buildings & Industry Awards to participate in the ASEAN Energy Awards.

It is suggested that the Ministry of Energy, Green Technology and Water (MEGTW) officially launch the EE Buildings & Industry Awards in the early 2010, and that the awards be presented during the energy month in November 2010.

4.4. Framework for implementation of a national energy award

As a start, it is proposed that the framework for a national energy award to be simple in order to encourage wider participation from companies. A framework for implementation is shown in Fig. 13 and is described next.

4.4.1. Award launching event

An award launching event will be held at strategic locations in several states in different regions in Malaysia (Southern Peninsular of Malaysia, Northern Peninsular of Malaysia, Federal States and East Malaysia). Interested companies will attend a half-day complimentary workshop to know more about the national energy award and the assessment criteria.

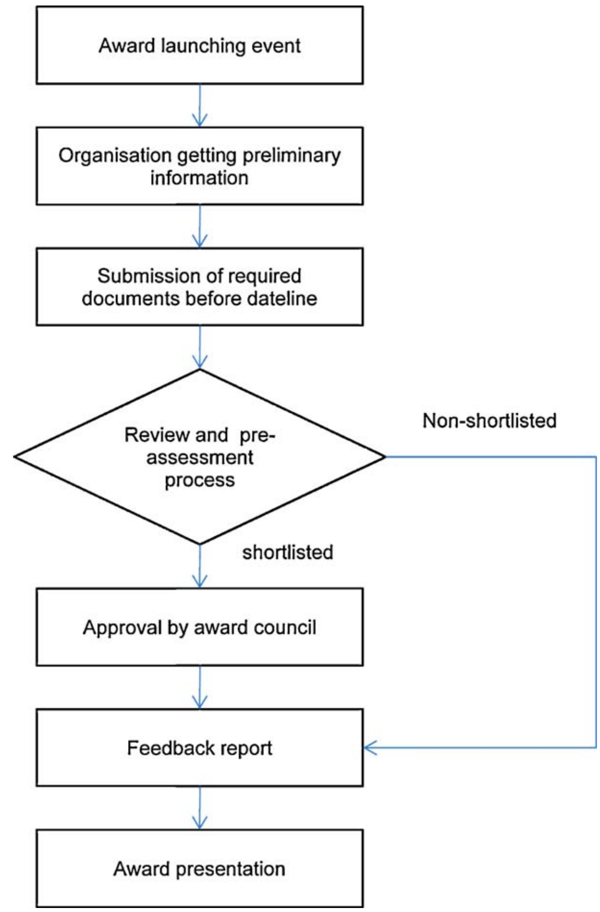


Fig. 13. Framework for implementation of the national energy award.

4.4.2. Organisation getting preliminary information

Applicants form industry, commercial, and government building sectors are required to provide their historical energy and fuel consumption data for three consecutive years. The applicant establishments/consumers should also submit their annual energy audit report for these 3 years. Such reports can be prepared by approved energy auditors in Malaysia.

4.4.3. Submission of application form and annual report

Participants should submit the application form as well as the relevant supporting documents to the organising committee before the application deadline. Incomplete submission will not be considered.

4.4.4. Review and pre-assessment process

The submissions will be evaluated by a board of judges, based on a set of assessment criteria. The board of judges will submit the list of winners to the award council.

4.4.5. Approval by award council

The award council will review the list of winners recommended by the board of judges. The winners will be determined and approved by the award council.

4.4.6. Feedback report

The board of judges will prepare a feedback report based on their findings during the evaluation process. The key strengths as

Table 6
Recommended stakeholders and their roles in Malaysia National Energy Award.

Role of stakeholders	Stakeholders involved
Prepare award paperwork and other award management	Malaysia Energy Centre (MEC)
Sponsor the award prizes (subsidy, prize money, loan and auditing cost)	Ministry of Energy, Green Technology and Water (MEGTW)
Industry/building audit	Malaysia Energy Centre, Energy services companies (ESCOs)
Launching event	MEC, MEGTW
Disseminate information on award for industries	MEGTW, MEC, Federation of Malaysian Manufacturers (FMM), Malaysian Iron and Steel Industry Federation, Malaysian Palm Oil Board, Palm Oil Research Institute of Malaysia, etc.
Disseminate information on award for buildings	MEGTW, MEC, Public Works Department (PWD), Malaysian Institute of Architects, Construction Industry Development Board, Real Estate and Housing Developers'' Association Malaysia, Association of Consulting Engineers Malaysia, etc.
Target participants for industries	All types of industries
Target participants for buildings	Office buildings and hotels
Award judges	1 invited ASEAN award Judge, 1 from MEC, 1 from MEGTW, 1 from academia, 1 from industry, 1 from building sector
Award council	MEC
Prize giving ceremony	MEGTW, MEC, other industries, media

well as the shortcomings of particular entries will be highlighted in the feedback report. Selected winners will be informed by the award's secretary.

4.4.7. Award presentation

A high-profile award presentation ceremony will be held to acknowledge the achievements of the winners. The attendance of key personnel from MEGTW will ensure media coverage of the event. Such publicity is important to encourage participation by other companies and to highlight the MEGTW's initiative in promoting energy conservation through the award system.

4.5. Role of stakeholders for industries

In order to ensure successful and sustainable implementation of the EE awards it is recommended that various key stakeholders be involved. The relevant stakeholders and their roles are as shown in Table 6.

4.6. Promotion strategy

To capture the attention of public and private industries, promotion strategy is crucial. In the case of Malaysia, there are two main strategies of promoting our events, namely strategic partnership and award launching event.

Forming a strategic partnership with government and the media ensures that the award gets sufficient coverage in promoting the event. Besides, it is suggested newspaper and TV are looking forward to be part of the media partner of this award, as it shows the dedication of respective media in promoting energy efficiency activities.

Promotion strategy to encourage participation in EE awards can be published through various media, company to company promotion, newspaper, websites, brochures, special invitations, road-shows and public announcements.

5. Conclusion

The Malaysian government aims to initiate the EE Buildings & Industry Awards in the very near future to promote EE and share best practices among companies. With the reward system in place, and with more showcase success stories and sharing of experiences, it is hoped that the use of EE will become a national culture 1 day. Organisation's top management commitment is important in order to ensure the success of implementation of EE in Malaysia. Besides that, cooperation from all stakeholders, e.g. from financial institutions, the academic sector and private investors is also needed. A nationwide launching of the EE award competition will highlight the importance given to the award.

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